

Air Quality Permit

Issued To: EnCana Energy Resources, Inc.	Permit #2765-05
Cut Bank Field, Station 002	Administrative Amendment (AA) Received: 04/30/03
600 South Excelsior	Department Decision on AA: 05/15/03
Butte, MT 59701	Permit Final: 05/31/03
	AFS Number: 035-0007

An air quality permit, with conditions, is hereby granted to the EnCana Energy Resources, Inc. - Cut Bank Field, Station 002 (EnCana) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et. seq.*, as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

The EnCana natural gas compressor station and associated equipment is located in the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 33, Township 36 North, Range 5 West, in Glacier County, Montana. This facility is known as the Cut Bank Field, Station 002. A complete list of permitted equipment is contained in Section I.A. of the permit analysis.

B. Current Permit Action

On April 30, 2003, the Department of Environmental Quality (Department) received a letter from Aspen Consulting & Engineering, Inc., on behalf of EnCana requesting the Department add testing requirements, which were inadvertently removed during the last permitting action (Permit #2765-04), back into the permit. The current permitting action adds the testing requirements back into the permit and updates the permit to reflect current permit language and rule references used by the Department.

Section II: Conditions and Limitations

A. Emission Limitations

1. Emissions from the 360-hp White Superior compressor engine shall not exceed the following (ARM 17.8.752):

NO _x ¹	8.73 lb/hr
CO	1.59 lb/hr
VOC	3.97 lb/hr

2. Emissions from the 600-hp White Superior compressor engine, with a Non-Selective Catalytic Reduction (NSCR) unit, shall not exceed the following (ARM 17.8.752):

NO _x ¹	2.65 lb/hr
CO	3.97 lb/hr
VOC	1.32 lb/hr

¹NO_x reported as NO₂.

3. EnCana shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
4. EnCana shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
5. EnCana shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.4. (ARM 17.8.749).
6. EnCana shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).

B. Testing Requirements:

1. The 600-hp White Superior compressor engine shall be tested concurrently for NO_x and CO to demonstrate compliance with the NO_x and CO emission limits contained in Section II.A.2. The station was last tested April 2003, testing shall continue on an every-four-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).
2. All compliance source tests shall be conducted in accordance with the Montana Source Testing Protocol and Procedures Manual (ARM 17.8.106).
3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirement:

1. EnCana shall supply the Department with annual production information for all emission points, as required by the Department, in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the most recent emissions inventory report and in Section I.A. of the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in units as required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. EnCana shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745(1)(d), that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit.

The notice must be submitted to the Department, in writing, 10 days prior to start-up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis

change and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by EnCana as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

Section III: General Conditions

- A. Inspection - EnCana shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections, surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted, if EnCana fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this subchapter shall be construed as relieving EnCana of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department's decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department's decision until the conclusion of the hearing and issuance of a final decision by the Board.
- F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.
- G. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by EnCana may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

Permit Analysis
EnCana Energy Resources, Inc.
Cut Bank Field, Station 002
Permit #2765-05

I. Introduction/Process Description

EnCana Energy Resources, Inc. - Cut Bank Field, Station 002 (EnCana) has applied for a modification to their air quality permit for a compressor station and associated equipment, located in the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 33, Township 36 North, Range 5 West, in Glacier County, Montana.

A. Permitted Equipment

This facility includes:

1. One 360-horsepower (hp) White Superior compressor engine (installed 1982)
2. One 600-hp White Superior compressor engine (installed 1984)
3. One 150-Thousand British Thermal Units (Mbtu)/hr Olman Heath reboiler
4. Two 120-MBtu/hr Heater Hotomatics
5. One 30-MBtu/hr Heater Coleman

B. Source Description

The complex has two primary purposes. The first is to pump the field gas up to the required pressure in the natural gas transmission system. Compression of the gas is accomplished using both compressors described above. Three heaters provide heat to the various station facilities.

The second purpose of the complex is to "dry" the gas as it is being processed. The gas contains some moisture, which must be removed from the system prior to being sent into the transmission system. This is accomplished with a dehydrator, also commonly called a reboiler or glycol unit.

The gas is treated with a glycol solution, which absorbs the water in the gas stream. The glycol solution is then heated to about 300° F to drive off the water and return the glycol. The heat necessary for this activity is generated by burning natural gas in the dehydrator reboiler. This unit will have a heat input of approximately 150 MBtu/hr. The reboiler is small by industrial standards, having a size approximately equivalent to a typical natural gas-fired small office heating system.

C. Permit History

On June 22, 1993, Montana Power Company - Cut Bank Field, Station 002 (Montana Power Company -Station 002) was issued **Permit #2765-00** for the operation of their compressor station and associated equipment, located in the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 33, Township 36 North, Range 5 West, in Glacier County near Cut Bank, Montana. The station was identified as the Cut Bank Field, Station 002.

A Best Available Control Technology (BACT) determination was required for the 360-hp White Superior compressor engine and the 600-hp White Superior compressor engine since they were not operating at the same location prior to March 16, 1979.

Based on the BACT analysis for the 360-hp White Superior compressor engine, the Department of Environmental Quality (Department) determined the BACT for this source was the proper operation of the engine to maintain compliance with the emission limitations in Section II.A.1. of Permit #2765-00.

Based on the BACT analysis for the 600-hp (de-rated) White Superior compressor engine, the Department determined the BACT was the installation and operation of a NSCR unit capable of meeting the limitations in Section II.A.2. of Permit #2765-00.

The Olman Heath 150 MBtu/hour dehydrator (reboiler) and the heaters at the Cut Bank Field, Station 002 were minor sources. Based on previous determinations, the BACT for these sources was determined to be no control.

On February 9, 1994, **Permit #2765-01** became final. On December 17, 1993, Montana Power - Station 002 requested a modification to Permit #2765-00 to revise the emission limitation units from g/bhp-hr to lb/hr. The revision allowed operational flexibility to account for varying parameters such as engine RPM, operating load (bhp), ambient air temperature, gas temperature, site, elevation, fuel gas quality, air/fuel ratio (AFR), field gas conditions, etc. Also, to clarify NO_x mass emission calculations, NO_x emission limitations were identified as NO₂.

On November 25, 1998, **Permit #2765-02** became final. As part of this permit modification, the testing requirements for the 360-hp White Superior compressor engine were removed. Removing the testing requirements for this engine was consistent with the Department's testing policy. The 360-hp White Superior compressor engine was last tested and demonstrated compliance on October 13, 1993. The rule references and the permitting language were also changed to reflect the format used for writing permits at the time of permit issuance. Permit #2765-02 replaced Permit #2765-01.

On March 8, 1999, **Permit #2765-03** became final. The permit action was a modification to Permit #2765-02. The Montana Power Company requested a name change to Montana Power Gas Company. The appropriate references in the permit were changed to reflect the name change. In addition, the permit was updated to reflect the current format used for writing permits. Permit #2765-03 replaced Permit #2765-02.

On August 16, 2002, **Permit #2765-04** became final. On January 22, 2002, the Department received a notice of corporate merger and name change from the Montana Power Gas Company to PanCanadian Energy Resources, Inc. (PanCanadian). The letter notified the Department that Montana Power Gas Company, Xeno, Inc., and Entech Gas Ventures, Inc. merged into North American Resources Company (NARCO) as of January 1, 2002. The letter also stated that at the same time, NARCO changed its corporate name to PanCanadian. In addition, on April 18, 2002, the Department received a letter from PanCanadian requesting a name change from PanCanadian to EnCana Energy Resources, Inc. (EnCana). The permit action transferred the permit from PanCanadian to EnCana and updated the permit with current permit language and rule references used by the Department. Permit #2765-04 replaced Permit #2765-03.

D. Current Permit Action

On April 30, 2003, the Department received a letter from Aspen Consulting & Engineering, Inc., on behalf of EnCana requesting the Department add testing requirements, which were inadvertently removed during the last permitting action (Permit #2765-04), back into the permit. The current permitting action adds the testing requirements back into the permit and updates the permit to reflect current permit language and rule references used by the Department. Permit #2765-05 replaces Permit #2765-04.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for the locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices), and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

EnCana shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

EnCana must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. (1) This rule requires that no person may cause or authorize emissions to be discharged to an outdoor atmosphere from any source installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes. (2) This rule requires that no person may cause or authorize emissions to be discharged to an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emissions sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, EnCana shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel, containing sulfur compounds, in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. EnCana will burn pipeline quality natural gas in

the permitted equipment, which will meet this limitation.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR Part 60.

D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that EnCana submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. EnCana was not required to submit a permit application fee because the change is considered administrative.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. This operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 - Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this subchapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain an air quality permit or permit alteration if they construct, alter or use any air contaminant sources that have the potential to emit greater than 25 tons per year of any pollutant. EnCana has the potential to emit more than 25 tons per year of nitrogen oxides (NO_x); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that are not subject to the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. EnCana was not required to submit an application for the current permit action because the change is considered administrative.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT determination was not required for the current permit action because there are no new or altered sources permitted as a part of this action.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Statutes and Rules. This rule states that nothing in the permit shall be construed as relieving EnCana of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Public Review of Permit Applications. This rule requires that EnCana notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. EnCana was not required to publish an affidavit of publication of public notice for the current permit action because the change is considered administrative.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana,

the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, subchapters 8, 9, and 10.
14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modification--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since it is not a listed source and the facility's potential to emit (PTE) is below 250 tons per year of any air pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 - Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:
 - a. PTE > 100 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), or PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tons/year of PM₁₀ in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. Title V of

the FCAA Amendments of 1990, requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #2765-05 for EnCana, the following conclusions were made:

- a. The facility's PTE is less than 100 tons/year for all criteria pollutants.
- b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/year of all HAPs.
- c. This source is not located in a serious PM₁₀ nonattainment area.
- d. This facility is not subject to any current NESHAP standards.
- e. This facility is not subject to any current NSPS standards.
- f. This source is not a Title IV affected source, nor a solid waste combustion unit.
- g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that EnCana will be a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each new or altered source. EnCana shall install on the new or altered source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis is not required for the current permit action, because there are no new or altered sources permitted as a part of this action and because the change is considered administrative.

IV. Emission Inventory

	Tons/Year					
	PM	PM ₁₀	SOx	NOx	VOC	CO
360-hp White Superior	0.12	0.12	0.01	34.04	15.46	6.19
600-hp White Superior	0.20	0.20	0.01	10.32	5.16	15.47
Olman Heath Reboiler	0.00	0.00	0.00	0.07	0.01	0.01
Heaters (3)	0.01	0.01	0.00	0.12	0.01	0.02
Total	0.33	0.33	0.02	44.55	20.64	21.69

Altitude of engine: 4110 ft
Percent: 89% (from manufacturer curve SC-8)
Calculation: $0.89 * 360 \text{ bhp} = 320.4 \text{ bhp}$

360-hp White Superior

Brake Horsepower: 320 bhp
Hours of operation: 8760 hr/yr

PM Emissions:
Emission Factor: 10 lb/10⁶ {2-02-002-02, AFSSCC page 32}
Control Efficiency: 0.0%
Fuel Consumption: 8500 Btu/bhp-hr {Maximum Design}
Calculations: $8500 \text{ Btu/bhp-hr} * 0.001 \text{ ft}^3/\text{Btu} * 320.4 \text{ bhp} * 8760 \text{ hr/yr} = 23,856,984 \text{ ft}^3/\text{yr}$
 $23,856,984 \text{ ft}^3/\text{yr} * 10 \text{ lb}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ ton/lb} = 0.12 \text{ ton/yr}$

PM₁₀ Emissions:
 Emission Factor: 10 lb/10⁶ {2-02-002-02, AFSSCC page 32}
 Control Efficiency: 0.0%
 Fuel Consumption: 8500 Btu/bhp-hr {Maximum Design}
 Calculations: 8500 Btu/bhp-hr * 0.001 ft³/Btu * 320.4 bhp * 8760 hr/yr = 23,856,984 ft³/yr
 23,856,984 ft³/yr * 10 lb/10⁶ ft³ gas * 0.0005 ton/lb = 0.12 ton/yr

NO_x Emissions:
 Emission factor: 11.00 gram/bhp-hr {AP-42, Table 3.2-1}
 Calculations: 11.00 gram/bhp-hr * 320.4 bhp * 0.002205 lb/gram = 7.77 lb/hr
 7.77 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 34.04 ton/yr

VOC Emissions:
 Emission factor: 5.00 gram/bhp-hr {AP-42, Table 3.2-1}
 Calculations: 5.00 gram/bhp-hr * 320.4 bhp * 0.002205 lb/gram = 3.53 lb/hr
 3.53 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 15.46 ton/yr

CO Emissions:
 Emission factor: 2.00 gram/bhp-hr {AP-42, Table 3.2-1}
 Calculations: 2.00 gram/bhp-hr * 320.4 bhp * 0.002205 lb/gram = 1.41 lb/hr
 1.41 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 6.19 ton/yr

SO_x Emissions:
 Emission factor: 0.002 gram/bhp-hr {AP-42, Table 3.2-1, 9/85}
 Calculations: 0.002 gram/bhp-hr * 320.4 bhp * 0.002205 lb/gram = 0.0014 lb/hr
 0.0014 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 0.01 ton/yr

Altitude of engine: 4110 ft
 Percent: 89%
 Calculation: 0.89 * 600 bhp = 534 bhp

600-hp White Superior

Brake Horsepower: 534 bhp
 Hours of operation: 8760 hr/yr

PM Emissions:
 Emission Factor: 10 lb/10⁶ {2-02-002-02, AFSSCC page 32}
 Control Efficiency: 0.0%
 Fuel Consumption: 8500 Btu/bhp-hr {Maximum Design}
 Calculations: 8500 Btu/bhp-hr * 0.001 ft³/Btu * 534 bhp * 8760 hr/yr = 39,761,640 ft³/yr
 39,761,640 ft³/yr * 10 lb/10⁶ ft³ gas * 0.0005 ton/lb = 0.20 ton/yr

PM₁₀ Emissions:
 Emission Factor: 10 lb/10⁶ {2-02-002-02, AFSSCC page 32}
 Control Efficiency: 0.0%
 Fuel Consumption: 8500 Btu/bhp-hr {Maximum Design}
 Calculations: 8500 Btu/bhp-hr * 0.001 ft³/Btu * 534 bhp * 8760 hr/yr = 39,761,640 ft³/yr
 39,761,640 ft³/yr * 10 lb/10⁶ ft³ gas * 0.0005 ton/lb = 0.20 ton/yr

NO_x Emissions:
 Emission factor: 2.00 gram/bhp-hr {Manufacturer Design and BACT analysis}
 Calculations: 2.00 gram/bhp-hr * 534 bhp * 0.002205 lb/gram = 2.35 lb/hr
 2.35 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 10.32 ton/yr

VOC Emissions:
 Emission factor: 1.00 gram/bhp-hr {Manufacturer Design}
 Calculations: 1.00 gram/bhp-hr * 534 bhp * 0.002205 lb/gram = 1.18 lb/hr
 1.18 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 5.16 ton/yr

CO Emissions:
 Emission factor: 3.00 gram/bhp-hr {manufacturer Design}
 Calculations: 3.00 gram/bhp-hr * 534 bhp * 0.002205 lb/gram = 3.53 lb/hr
 3.53 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 15.47 ton/yr

SO_x Emissions:
 Emission factor: 0.002gram/bhp-hr {AP-42, Table 3.2-1,9/85}
 Calculations: 0.002 gram/bhp-hr * 534 bhp * 0.002205 lb/gram = 0.0024 lb/hr
 0.0024 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 0.01 ton/yr

Olman Heath Reboiler

PM Emissions
 Emission Factor: 5 lb/10⁶ {AP-42, 1.4-1}
 Control Efficiency: 0.0%
 Fuel Consumption: 150.00 MBtu/hr {AP-42, Table 3.2-1}
 Calculations: 150.00 MBtu/hr * 1000 Btu/MBtu * 0.001 ft³/Btu * 5 lb/10⁶ ft³ gas = 0.0008 lb/hr
 0.0008 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.00 ton/yr

PM₁₀ Emissions:
 Emission Factor: 5 lb/10⁶ {AP-42, 1.4-1}
 Control Efficiency: 0.0%
 Fuel Consumption: 150.00 MBtu/hr {AP-42, Table 3.2-1}
 Calculations: 150.00 MBtu/hr * 1000 Btu/MBtu * 0.001 ft³/Btu * 5 lb/10⁶ ft³ gas = 0.0008 lb/hr
 0.0008 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.00 ton/yr

NO_x Emissions:
 Emission Factor: 100 lb/10⁶ {AP-42, 1.4-1}
 Control Efficiency: 0.0%
 Fuel Consumption: 150.00 MBtu/hr {AP-42, Table 3.2-1}
 Calculations: 150.00 MBtu/hr * 1000 Btu/MBtu * 0.001 ft³/Btu * 100 lb/10⁶ ft³ gas = 0.0150 lb/hr
 0.0150 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.07 ton/yr

VOC Emissions:
 Emission Factor: 8 lb/10⁶ {AP-42, 1.4-1}
 Control Efficiency: 0.0%
 Fuel Consumption: 150.00 MBtu/hr {AP-42, Table 3.2-1}
 Calculations: 150.00 MBtu/hr * 1000 Btu/MBtu * 0.001 ft³/Btu * 8 lb/10⁶ ft³ gas = 0.0012 lb/hr
 0.0012 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

CO Emissions:
 Emission Factor: 20 lb/10⁶ {AP-42, 1.4-1}
 Control Efficiency: 0.0%
 Fuel Consumption: 150.00 MBtu/hr {AP-42, Table 3.2-1}
 Calculations: 150.00 MBtu/hr * 1000 Btu/MBtu * 0.001 ft³/Btu * 20 lb/10⁶ ft³ gas = 0.0030 lb/hr
 0.0030 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

SO_x Emissions:
 Emission Factor: 0.6 lb/10⁶ {AP-42, 1.4-1}
 Control Efficiency: 0.0%
 Fuel Consumption: 50.00 MBtu/hr {AP-42, Table 3.2-1}
 Calculations: 150.00 MBtu/hr * 1000 Btu/MBtu * 0.001 ft³/Btu * 0.6 lb/10⁶ ft³ gas = 0.0001 lb/hr
 0.0001 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.00 ton/yr

Heaters (3)

PM Emissions
 Emission Factor: 5 lb/10⁶ {AP-42, 1.4-1}
 Control Efficiency: 0.0%
 Fuel Consumption: 270.00 MBtu/hr {Information from Company}
 Calculations: 270.00 MBtu/hr * 1000 Btu/MBtu * 0.001 ft³/Btu * 5 lb/10⁶ ft³ gas = 0.0014 lb/hr
 0.0014 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

PM₁₀ Emissions:
 Emission Factor: 5 lb/10⁶ {AP-42, 1.4-1}
 Control Efficiency: 0.0%
 Fuel Consumption: 270.00 MBtu/hr {Information from Company}

Calculations: $270.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * 0.001 \text{ ft}^3/\text{Btu} * 5 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas} = 0.0014 \text{ lb/hr}$
 $0.0014 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

NO_x Emissions:
Emission Factor: $100 \text{ lb}/10^6 \text{ {AP-42, 1.4-1}}$
Control Efficiency: 0.0%
Fuel Consumption: 270.00 MBtu/hr {Information from Company}
Calculations: $270.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * 0.001 \text{ ft}^3/\text{Btu} * 100 \text{ lb}/10^6 \text{ ft}^3 \text{ gas} = 0.0270 \text{ lb/hr}$
 $0.0270 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.12 \text{ ton/yr}$

VOC Emissions:
Emission Factor: $8 \text{ lb}/10^6 \text{ {AP-42, 1.4-1}}$
Control Efficiency: 0.0%
Fuel Consumption: 270.00 MBtu/hr {Information from Company}
Calculations: $270.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * 0.001 \text{ ft}^3/\text{Btu} * 8 \text{ lb}/10^6 \text{ ft}^3 \text{ gas} = 0.0022 \text{ lb/hr}$
 $0.0022 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

CO Emissions:
Emission Factor: $20 \text{ lb}/10^6 \text{ {AP-42, 1.4-1}}$
Control Efficiency: 0.0%
Fuel Consumption: 270.00 MBtu/hr {Information from Company}
Calculations: $270.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * 0.001 \text{ ft}^3/\text{Btu} * 20 \text{ lb}/10^6 \text{ ft}^3 \text{ gas} = 0.0054 \text{ lb/hr}$
 $0.0054 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.02 \text{ ton/yr}$

SO_x Emissions:
Emission Factor: $0.6 \text{ lb}/10^6 \text{ {AP-42, 1.4-1}}$
Control Efficiency: 0.0%
Fuel Consumption: 270.00 MBtu/hr {Information from Company}
Calculations: $270.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * 0.001 \text{ ft}^3/\text{Btu} * 0.6 \text{ lb}/10^6 \text{ ft}^3 \text{ gas} = 0.0002 \text{ lb/hr}$
 $0.0002 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

V. Existing Air Quality

Permit #2765-05 allows the operation of a natural gas compressor station and associated equipment to be located in the SW¹/₄ of the SE¹/₄ of Section 33, Township 36 North, Range 5 West, in Glacier County, Montana. The Department believes that the amount of controlled emissions generated by this project will not exceed any set ambient air quality standard.

VI. Ambient Air Impact Analysis

Permit #2765-05 would allow the operation of a natural gas compressor station and associated equipment to be located in the SW¹/₄ of the SE¹/₄ of Section 33, Township 36 North, Range 5 West, in Glacier County, Montana. The Department believes that the amount of controlled emissions generated by this project will not exceed any set ambient air quality standard. Previously, ambient air quality modeling was conducted for all compressor stations in and near Glacier, Toole, Liberty and Pondera Counties using two EPA guideline models, ISC2 and COMPLEX. The meteorological data used was taken from the Great Falls Airport National Weather Service station. The modeling for Cut Bank Field, Station 002 conservatively assumed approximately 140.8 tons per year of NO_x and 140.8 tons per year of CO. This modeling did not show violations of the annual or hourly ambient standards. The modeling analysis demonstrates that this facility will not cause a violation or exceedance of any state or federal ambient standard and controls at this station will further reduce the impacts of this facility. The Department expects EnCana to continue to operate in compliance with the applicable ambient air quality standards by operating in accordance with the operational conditions and limitations included in the permit, which will be protective of air quality in the proposed area of operation.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment is not required for the current permitting action because the change is considered administrative.

Permit Analysis Prepared By: Chris Ames

Date: May 8, 2003